4 DISTRICT-WIDE RECOMMENDATIONS

Land Use Policies & Strategies

This chapter describes the broad policies and strategies to direct future development in the Harbor District. The chapter begins with overall land use and built form policy recommendations and then discusses use and form strategies for residential, commercial, industrial, parks and open space, and transportation and utilities land uses. For site or sub-district specific recommendations, see chapter 5: Sub-District and Corridor Recommendations.

Vision

The Harbor District will provide space for a mix of land uses in a walkable, urban neighborhood that serves a variety of people through inclusive and diverse employment opportunities, businesses, housing options, and public spaces. Land uses will include new mixed-use neighborhoods, commercial office employment centers, industrial districts, public green spaces, and commercial shipping and transportation. The land use mix and design strategies will encourage new development while preserving the historic character of the area.

Context

While the Harbor District was historically dominated by industrial and transportation uses, new uses have begun to move into the District in recent years. Industrial loft buildings are being converted to new housing, office, start-up, and retail space, and former brownfields are being reused for new mixed-use developments. While this new investment and development has brought people and energy to the area, there are existing industrial and transportation uses in the Harbor District that need to be protected and preserved. These users provide vital employment opportunities to Milwaukee residents and transportation and freight services to businesses throughout the Milwaukee region. The recommendations seek to balance these different uses and interests.

General Land Use and Built Form Recommendations

These general recommendations are land use and form principles that apply to all land use types and serve to create an attractive, walkable, urban neighborhood across the Harbor District.

1. Maintain (or, where possible, create) the street and block system, and avoid mega-blocks, to simplify wayfinding and improve pedestrian experience.
2. Buildings should fit the traditional pattern of walkable neighborhoods by locating close to the street with facades that are human in scale and pedestrian friendly.
3. Design infill development and new construction to respect existing context while contributing to the architectural quality of the neighborhood.
4. Discourage blank walls along street, public walkway, or water frontages, including for industrial users. Facades can be modulated through the use of articulated bays, windows, openings, depth in facade, awnings, texture, coordinated landscaping, and other architectural detailing.
5. Locate garages, garage entrances, loading docks, and overhead doors so they are not the dominant feature on the front facade and are screened from public view.
6. Minimize curb cuts and driveways, especially on primary streets. Access for loading docks and parking should be combined. On primary streets, encourage alley or side street vehicle access.
7. Discourage demolition of buildings for the sole purpose of constructing surface parking lots.
8. Encourage surface parking lots to be to the rear of buildings. In cases where surface parking must be located on the side or front of buildings, deploy strategies to mitigate against the negative impacts on the pedestrian realm such as high quality plantings and landscaping and minimize parking along the primary street frontage.
9. Where parking lots are located between the public sidewalk and the front entrance of a building, each building should be served by a clearly identifiable pedestrian walkway paved with non-asphalt materials.
10. Preserve existing buildings whenever possible, and highlight historic elements such as architectural details or signage.
11. Include special architectural design features on the corners of any buildings located at the intersections of two primary streets or at the visual termination of any primary street.

The Clock Shadow Building in Walker's Point demonstrates context sensitive development that contributes to a walkable environment.

Residential Recommendations

The residential recommendations are intended to preserve existing housing stock where appropriate, enhance existing residential areas, and create new opportunities for existing and new residents of diverse incomes, and in various life stages, to live close to employment, shops and services, and recreational amenities.

See the Equity and Affordability section in this chapter for recommendations specific to housing affordability.

12. New housing should be multi-family to contribute to the existing dense, mid-rise, urban character of the District. Exceptions are areas with existing single-family or duplex homes where new development should fit within the context of those areas and could include new single-family or duplex housing..

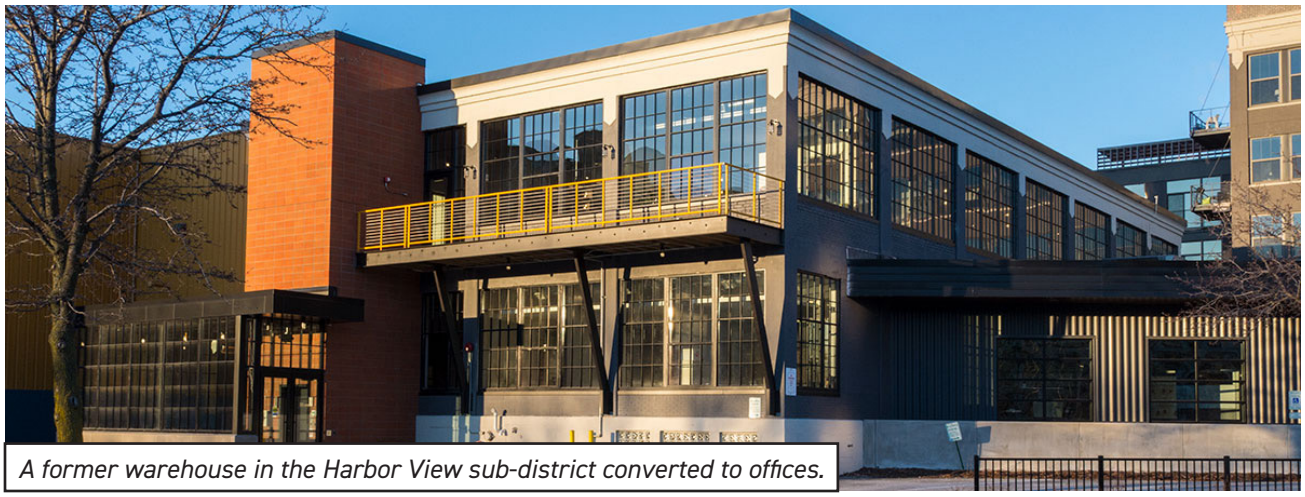
13. New multi-family residential or mixed use developments are encouraged to adhere to the City of Milwaukee's Commercial Building Sustainable Design Guidelines.

14. Allow the conversion of former warehouse and industrial buildings that are no longer viable to residential, commercial, and mixed uses, in locations consistent with the sub-district and corridor specific recommendations in chapter 5.

15. Encourage mixed uses within residential developments, such as residential along with retail, service, office, or institutional uses. Explore zoning options that may allow appropriate light industrial uses to be mixed with residential in a live/work arrangement.

16. Locate housing for seniors and persons with disabilities near neighborhood goods and services and near transit routes.

17. Prohibit residential uses in areas where non-compatible industrial uses are recommended to be preserved within the sub-district and corridor specific recommendations in chapter 5.



A former warehouse in the Harbor View sub-district converted to offices.

Commercial Recommendations

The commercial recommendations are intended to strengthen the area's existing commercial corridors, attract new businesses that create jobs, provide goods and services for local residents, and attract customers from across the region.

18. Encourage mixed-use developments with pedestrian-oriented commercial (retail, service, other active use) on the first floor and office or residential on the upper floors.

19. Intensify commercial and mixed-uses near transit stops and major intersections.

20. Avoid a concentration of automobile oriented uses such as gas stations, drive-through establishments, and convenience stores along commercial corridors and main streets in the District.

21. New commercial or mixed use developments are encouraged to adhere to the City of Milwaukee's Commercial Building Sustainable Design Guidelines.

22. Locate civic and institutional uses along main corridors or at prominent intersections to make them easily accessible on foot, by car, bicycle, bus, or other means of transportation.

Industrial Recommendations

The industrial recommendations are intended to improve industrial employment opportunities, support existing industrial users, and provide space for new industrial users to locate in the Harbor District.

23. Encourage multi-story buildings that include industrial uses in mixed-use areas. Newer single story manufacturing should be located within designated industrial areas according to the sub-district and corridor recommendations in chapter 5.

24. Provide views into the operations of industrial buildings. Ground floor windows create activity at the street level and a more pedestrian-friendly environment; provide better light inside the facility; demystify the operation; and engage passersby.

25. Discourage outdoor industrial activities for businesses located near non-industrial uses.

26. New industrial buildings should adhere to the Menomonee Valley Sustainable Design Guidelines.

27. Building materials should support the aesthetic goals of the District. Vinyl siding is inappropriate and the use of EIFS siding is discouraged and should be minimized. EIFS should not be used on the base of buildings or surrounding entryways.

Large windows allow passersby to view ice cream making in progress in Walker's Point.

Parks and Open Space Recommendations

The parks and open space recommendations are intended to develop a new public space network that provides a variety of types of public spaces that are compatible with all of the land and water uses in the Harbor District. The public space network will ensure that every resident in the Harbor District lives within a 10-minute walk of a park, shared-use path, riverwalk, or other public space and will serve as an amenity that improves quality of life, bolsters economic development efforts, and allows residents and visitors to explore the Harbor District.

28. Encourage a network of public spaces that includes the following: pocket parks, riverwalk, shared-use paths, boat launches, landscaped spaces between and in front of buildings, play areas and tot lots, recreational services, public spaces for social interaction, and streetscape enhancements such as benches, planters, street trees, and public art.

29. Ensure that all parks and public spaces are accessible by including connections to neighborhoods in and near the Harbor District via wayfinding signage and graphics, street networks, and pedestrian trails.

30. Create well marked, attractive, and visible access points and wayfinding signage or graphics to all parks, shared-use paths, riverwalk, and on the river itself (including exit points and ladders).

31. Create and maintain clear sight lines into and through parks and public spaces to ensure a safe and welcoming environment for park users.

32. Create an uninterrupted network of waterfront public access as described in the Improved Waterfront Experience catalytic project in chapter 6.

33. Plan for connectivity between parks and public spaces in a way that supports their use as habitat and contributes to a district-wide habitat network as described in the Habitat and Ecology section of this chapter.

34. Integrate the natural history of the area into public spaces, and identify opportunities to incorporate natural habitat and green infrastructure in public park spaces. Use public spaces as an opportunity to educate visitors and encourage stewardship.

35. Integrate neighborhood, Harbor District, and community history and culture into public spaces. Recognize the history of populations no longer present in the area including Native American and Kaszube peoples.

36. Ensure that some new public spaces include active recreation opportunities (soccer fields, running paths, playgrounds, etc.).

37. Target unused railroad spurs for conversion to public shared-use paths, green infrastructure, or other public amenities.

38. Ensure that resident engagement during the design phase, especially from households currently lacking access to park amenities, is integral in shaping the programing and amenities of any new park spaces.

Transportation and Utilities Recommendations

Transportation and utility recommendations are intended to create a safe, multi-modal system that connects residents, workers, and visitors to and through the Harbor District, supports economic development efforts, and provides the infrastructure necessary to deliver services in an effective and efficient manner.

Streets and Sidewalks

39. All streets should be designed, or redesigned when they are reconstructed, with complete streets principles that account for all potential users of a street and should include green infrastructure.

40. Require continuous sidewalks and adequate sidewalk or trail connections on all streets, excluding those on Jones Island.

41. Incorporate design features into arterial streets that calm traffic, improve safety, and contribute to the street's aesthetics. Examples include, but are not limited to, crosswalks, bump outs, trees, plantings, lighting, and street furniture.

South Second Street in Walker's Point

Complete Streets

Complete streets are public right-of-ways that are safe, comfortable and convenient for users of all travel modes including walking, use of mobility aids, bicycling, riding public transportation, driving trucks, buses, automobiles and motorcycles. Complete streets also incorporate green infrastructure when feasible to responsibly manage stormwater where it falls.

42. Where feasible, provide wider sidewalks along commercial districts and other main streets to provide space for pedestrians, street furniture, and green infrastructure.

43. Maintain and promote two-way traffic on all streets.

44. Maintain truck and over size over weight (OSOW) routes to/from industrial users and between Port Milwaukee and highways.

Personal Vehicles and Parking

45. Encourage active first floor uses within parking structures.

46. Encourage parking structures that serve multiple users (shared parking) to minimize the number of surface lots or parking structures needed to serve an area.

Public Transportation

Bublr bike share station in Walker's Point.

47. Transit routes should be well defined and aesthetically integrated into neighborhoods with special paving features, signage, stop shelters, benches, historic markers, and public art at key nodes.

48. Work with MCTS to ensure that any location in the Harbor District (excluding Jones Island) is within ¼ mile of a transit stop.

49. Encourage new transit investments such as increased bus service, bus rapid transit, streetcar, light rail, or commuter rail in and near the Harbor District and connect to existing transportation networks.

50. Work towards the development of the Kenosha-Racine-Milwaukee Commuter Link (KRM) as a possible future commuter rail corridor.

Bicycles

51. Complete the Kinnickinnic River Trail with the goal of creating an uninterrupted, dedicated, and protected bicycle route connecting Bay View to the Hank Aaron State Trail and Oak Leaf Trail. See the Improved Access and Mobility catalytic project for more details.

52. Connect the Kinnickinnic River Trail with surrounding neighborhoods via improved bicycle connections along Pittsburgh, Washington, Maple, and Bay Streets. See the Improved Access and Mobility catalytic project for further details.

53. Work with Bublr Bikes to ensure that any location within the Harbor District (excluding Jones Island) is within ½ mile of a bike share station.

Parking structure with active first floor use.

Rail

54. Preserve the rail right-of-way identified in the Kenosha-Racine-Milwaukee Commuter Link Study (KRM) as a possible future commuter rail corridor.

Marine/Water Transportation

55. All marinas and boatyards in the Harbor District should be certified Wisconsin Clean Marinas.

56. Port Milwaukee should achieve a level 5 rating on the Green Marine certification program.

Utilities

57. Where feasible, utility infrastructure should include attractive screening, public art, or other strategies that allow facilities to blend into or contribute aesthetically to the surrounding built environment.

58. Identify opportunities to illustrate or illuminate the functionality of utility infrastructure in an effort to educate the community on the importance of water, power, and other utility systems.

Painted utility box.

Green wall screening.

Equity and Affordability

Of the 71 largest metro areas in the country, Milwaukee ranks worst in unemployment equality between African-Americans (13.8% unemployed) and whites (2.7% unemployed). The Milwaukee metro area ranks third from the bottom for unemployment equality between Hispanic/Latinos (6.2%) and whites. Thirty-nine percent of African-Americans and 33% of Hispanic/Latinos in the city of Milwaukee live below the poverty line, versus 18% of white residents. These numbers are only a small sample of the many statistics and studies in recent years that have shed light on the scale of economic inequality that exists in Milwaukee.

Continued economic inequality is a serious threat to the future growth and development of our community. The development of the Harbor District provides an opportunity to address economic inequality and other equity issues due to the scale of opportunity it offers and its proximity to low-income and minority neighborhoods. This plan identifies several ways the future development of the Harbor District can address inequality in income, employment, and quality of life. However, new programs, organizations, and regulations will be needed that are targeted and intentional about connecting low-income, minority, and disadvantaged communities to economic opportunity in the Harbor District.

Additional work will also have to be done after this plan is completed to ensure the Harbor District of the future is a place where all residents of Milwaukee feel comfortable and welcome. Many comments were received during the planning process from community members that said they did not feel welcome in newly developed neighborhoods of Milwaukee. "New development only caters to people with high-incomes" or "none of the housing, businesses, or services are open to me" were comments frequently heard at public meetings or on surveys.

The following recommendations create a framework for equitable development within the Harbor District.

Job Availability and Access

The land use and economic development recommendations in this plan are aimed at creating a range of employment opportunities that are accessible to workers with varied educational and experiential backgrounds. Space has been identified for light industrial users that tend to offer more entry level jobs with greater opportunities for advancement. Other space has been identified for commercial office users that employ higher wage professionals with advanced educational backgrounds. Mixed in with these uses are service jobs that provide employment for many City of Milwaukee residents.

Employed residents are the single most important ingredient in the city's economic health. Residents who hold jobs add value to the economy by using their skills to make employers more competitive, and the wages they earn are recycled locally and regionally through expenditures for everything from houses and cars to restaurant meals.

- City of Milwaukee's Growing Prosperity Economic Development Action Agenda

Locating this mix of land uses in the middle of the city, with access to transit, and close to large labor pools will provide increased opportunities for city residents to work closer to where they live. As of 2014, only 10.7% of workers who live in the 53204 zip code (the near south side and a large portion of the Harbor District) also work within the zip code. Over half of the workers who live in 53204 leave the city of Milwaukee every day to work. If employment opportunities for existing near south side residents can be provided within the Harbor District, the resulting benefits related to commuting, household income, and linking the shared sense of community between near south side neighborhoods and the waterfront will have many positive effects for the Harbor District, the near south side, and the entire City of Milwaukee.

As the Harbor District is centrally located and well connected to existing transit networks, future employment opportunities here will be accessible to residents city-wide. The following recommendations are aimed at connecting city residents to future job opportunities.

1. Work with workforce development partners and employers to develop programming to connect city residents to employment opportunities in the Harbor District.

2. Encourage developers and contractors working on new development in the Harbor District to maximize the use of local subcontractors and neighborhood workers on construction projects, even when not required by project funding sources.

3. Attract businesses to the Harbor District that will provide job opportunities accessible to a wide range of existing area residents and then support those businesses in developing strategies and programs to hire from the area.

4. New commercial office developments should provide 75 full-time jobs per acre (as recommended in the Land Use Policies and Strategies section).

5. New industrial development should provide 22 full-time jobs per acre (as recommended in the Land Use Policies and Strategies section).

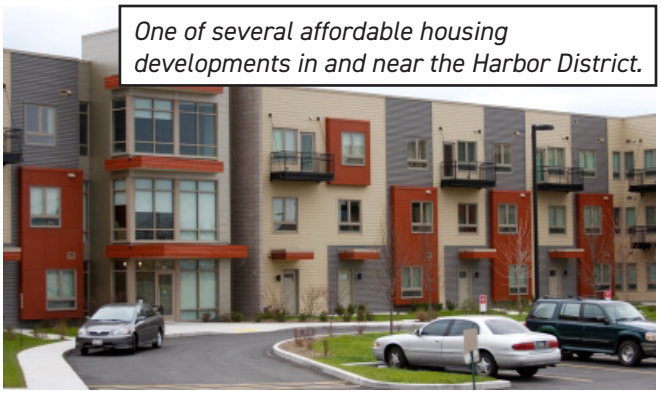
Housing

One theme that emerged repeatedly throughout the planning process and across all of the different public input venues was a desire that housing options in the Harbor District be accessible to households with a wide range of incomes. This is consistent with the goals of the Walker's Point Strategic Action Plan, which identified maintaining the social and economic diversity of the neighborhood and preserving housing affordability as primary goals. However, market trends and pressures in the neighborhoods surrounding the Harbor District are already working counter to that desire; new investment, waterfront improvements, and job creation spurred by this plan may well exacerbate those trends. Achieving these goals will therefore require deliberate public and private sector action and investment in the form of both policy tools and financial incentives.

The following goals and strategies should be pursued to ensure housing affordability and economic diversity remain ingrained in the efforts to create new housing options in the Harbor District.

6. Create new affordable and subsidized housing options and housing of varying sizes.

a. Advocate for changes to the the Low Income Housing Tax Credit (LIHTC) Qualification Allocation Plan (QAP) that make it more attractive to develop affordable housing projects in areas that are close to employment opportunities, accessible to public transit, and/or are neighborhoods at risk of displacement.



One of several affordable housing developments in and near the Harbor District.

b. Include affordable housing units in any new multi-family residential development that involves the sale of publicly owned land.

c. Consider innovative housing approaches such as live/work and co-housing to provide a variety of housing options in the District.

d. Provide housing that is appropriate for larger family sizes and extended family living in the same household.

7. Preserve existing affordable housing units in and near the Harbor District.

   a. As Low Income Housing Tax Credit (LIHTC) subsidized affordable housing units age out of the program, identify strategies to maintain the units as affordable housing in perpetuity.

   b. Consider mechanisms to protect elderly or fixed-income homeowners from the potential for displacement caused by rising property tax assessments, such as a property tax relief tools or community land trust.

   c. Identify and implement additional strategies to preserve subsidized and naturally occurring affordable housing through the City of Milwaukee's ongoing Equitable Growth Through Transit Oriented Development planning study.

In the months following the adoption of the Water and Land Use Plan, the City of Milwaukee and Harbor District Inc. will continue evaluate the specific tools that are most appropriate to create and preserve affordable housing units in the area through the ongoing Equitable Growth through Transit Oriented Development Planning Study. That study will recommend specific financing strategies and policies that are tailored to Walker's Point and the Harbor District given current development trends and the potential for new housing demand caused by future transit investments. It will also set numeric goals for the number of affordable housing units that should be created or preserved in the area. All of recommendations that are likely to emerge from that study will require the same type of sustained, long term, public and private collaboration and commitment that went into the development of this plan if they are to be successfully implemented.

Parks and Public Space

While Milwaukee has an extensive park system with spaces managed by the City, County, and State, the distribution and access to parks and public spaces varies widely across the city and metro area. Areas of the city and metro area that are wealthier and whiter tend to have better access to parks and public spaces, with the near south side of Milwaukee providing an example of this inequity in park distribution.

The 53204 zip code (roughly, the near south side and a large portion of the Harbor District), has 1.8 acres of park per 1,000 residents. The City of Milwaukee averages 8.8 acres of park per 1,000 residents. Other waterfront areas in Milwaukee have numbers far exceeding the city average - as high as 30 acres per 1,000 residents. The discrepancy in park access is even starker when taking into account that a single park - Mitchell Park, on the western edge of the zip code - comprises 60 of the 73 acres of park in 53204.

The recommendations in this plan aim to address the need for parks and public space on the near south side of Milwaukee by providing new parks in the portion of the Harbor District closest to the concentrations of households currently lacking in park access.

Recommendations below can also be found in other chapters and sections including Land Use Policies and Strategies, chapter 5 (sub-districts and corridors), and chapter 6 (catalytic projects).

8. Encourage a network of public spaces that includes the following: pocket parks, riverwalk, shared-use paths, boat launches, landscaped spaces between and in front of buildings, play areas and tot lots, recreational services, public spaces for social interaction, and streetscape enhancements such as benches, planters, street trees, and public art.

9. Ensure that all parks and public spaces are accessible by including connections to neighborhoods in and near the Harbor District via wayfinding signage and graphics, street networks, and pedestrian paths. Given that opportunities for new parks within the Harbor District are generally at the edges of the neighborhood, it will be vitally important to connect people to them via complete streets, shared-use paths, and public transit.

10. Create well marked, attractive, and visible access points and wayfinding signage or graphics to all parks, paths, riverwalk, and on the river itself (including exit points and ladders).

11. Create an uninterrupted network of waterfront public access as described in chapter 6: Improved Waterfront Experience catalytic project.

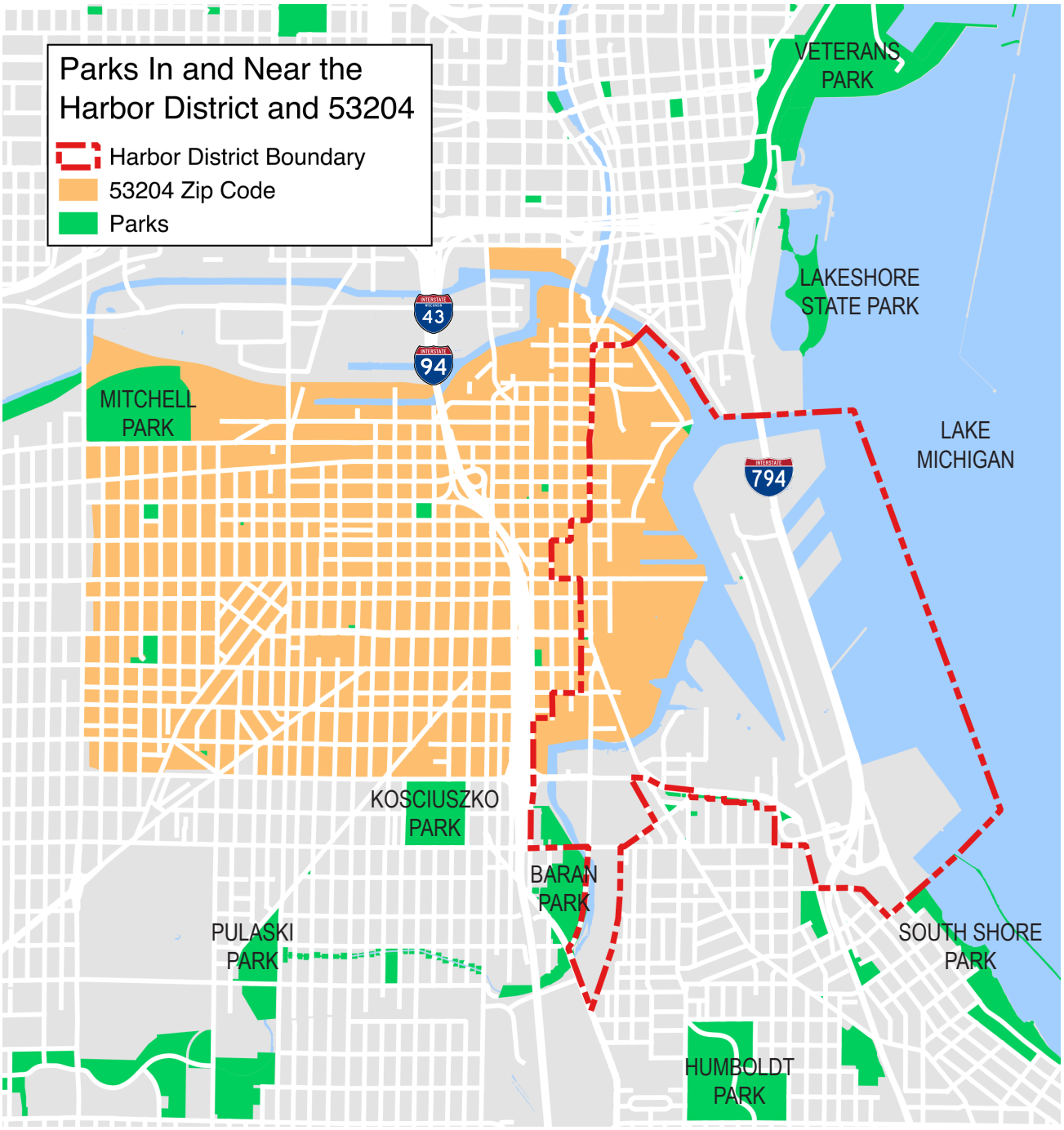
12. Design and build a new linear waterfront park that extends the length of the East Greenfield Avenue district. The park would include shared-use paths, a kayak launch, green infrastructure, more active spaces on the northern end (sports courts, playgrounds, etc.), and more natural spaces on the southern end (native vegetation, sloped water's edge, etc.). Further details in chapter 6: East Greenfield Avenue catalytic project.

13. Target unused railroad spurs for conversion to public shared-use paths, green infrastructure, or other public amenities.

14. Ensure that some new public spaces include active recreation opportunities (soccer fields, running paths, playgrounds, etc.) to respond to preferences expressed in the planning process.

15. Ensure that resident engagement during the design phase, especially from households currently lacking access to park amenities, is integral in shaping the programing and amenities of any new park spaces.

Should the recommendations for new park space in the Harbor District be fully implemented, park access in the 53204 zip code would be expected to rise above 2 acres of park per 1,000 residents. This is an improvement, but still well behind other areas in the city and additional opportunities for public and park space should be explored across the south side of Milwaukee. Where vacant land exists, such as in the East Greenfield District, it is important that some of that land is preserved as park and open space that can contribute towards reducing park access inequity.



Economic Development

Large tracts of land in the center of a city, with access to waterfront, workforce, and transportation routes, provide an opportunity for economic development. This section contains broad recommendations to guide the redevelopment of the Harbor District as a whole; for site-specific recommendations, see Chapter 5, Sub-District Recommendations.

Job Creation

As described in the Equity and Affordability section, attracting employers to the Harbor District creates job opportunities close to existing public transit and densely populated neighborhoods in the middle of the city. To fully capitalize on this locational advantage, new development should be held to minimum job density standards. The recommendations below were developed by creating economic models for various land uses based on similar developments in the Milwaukee area. These models were then analyzed to determine average job densities for the various types of development recommended in the Harbor District.

1. New commercial office developments should provide 75 full-time jobs per acre.
2. New industrial development should provide 22 full-time jobs per acre.
3. In recruiting new users, priority should be given to businesses that provide living-wage jobs accessible to those with a variety of educational attainment levels.

Using the models described above and identifying properties likely to change in the near future, an analysis was conducted to estimate the potential economic impact of the plan land use recommendations with regard to employment and property values.

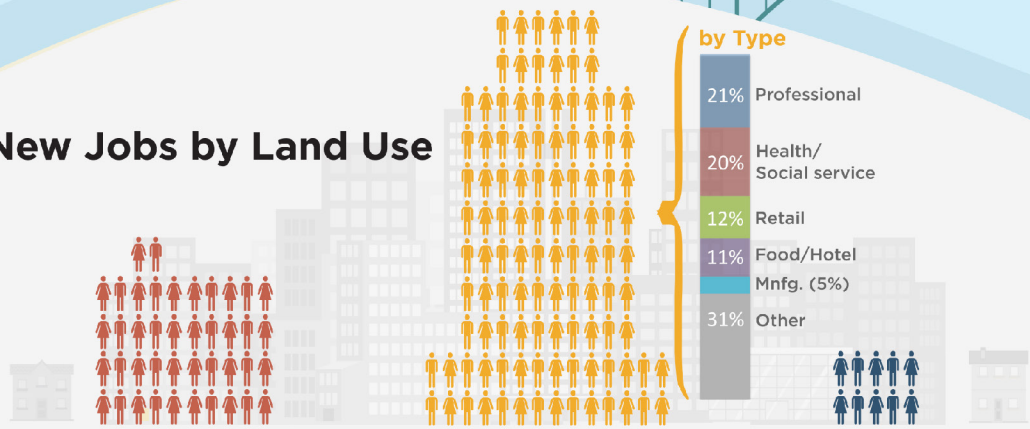
Should the preferred land use recommendations be implemented on properties likely to change, there is the potential to create approximately 5,600 new jobs, with 2,300 of them being family-supporting jobs. There is also the potential to create up to $864 million in increased property value. It should be noted that these are conservative estimates with properties likely to change only including currently vacant and underutilized properties, properties being actively marketed for sale, and properties that would change use under the proposed land use recommendations.

Milwaukee's Harbor District

Projected Economic Impact

Employment

New Jobs by Land Use

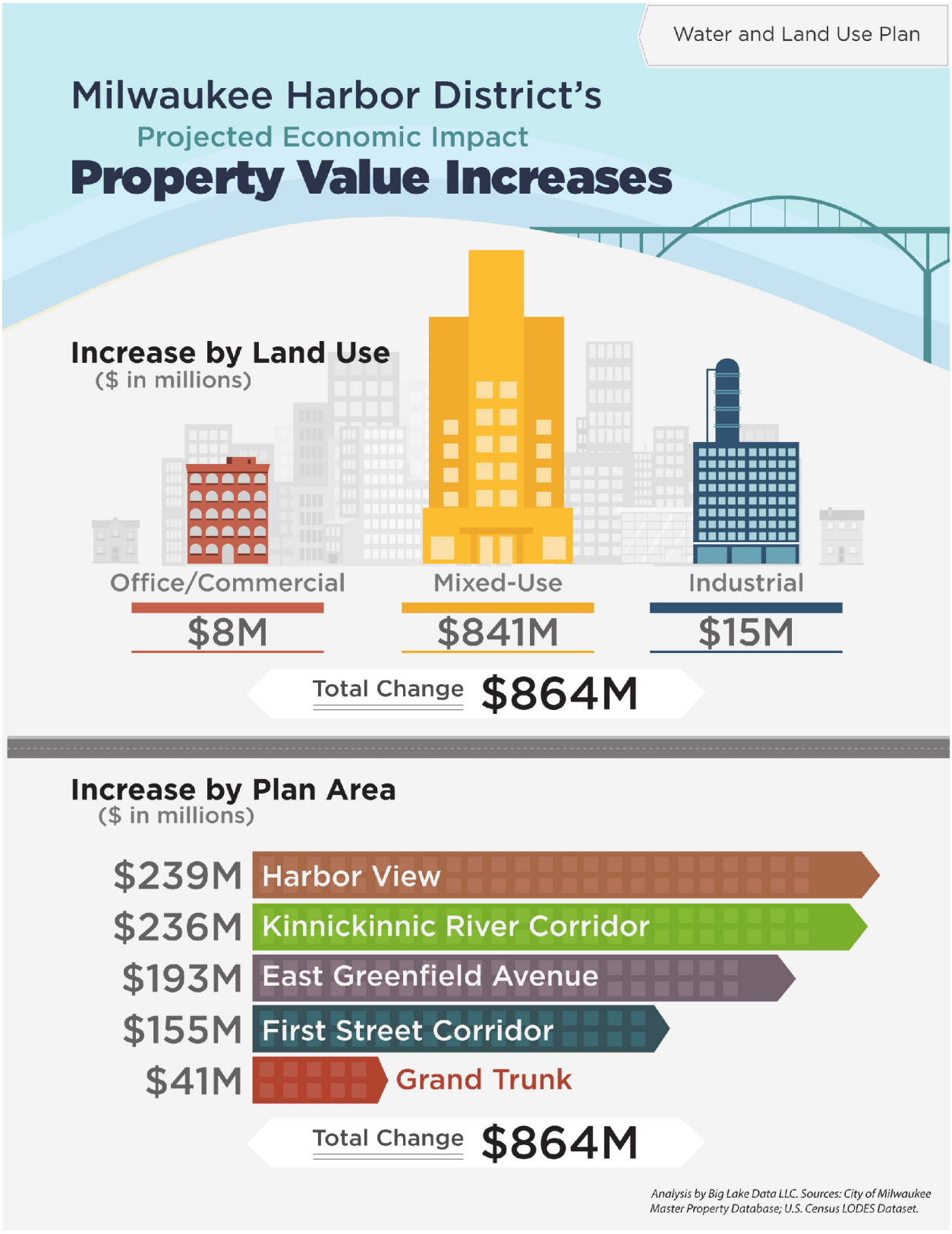


Total Jobs **5,663**

New Jobs by Annual Earnings

Total Jobs **5,663**

Analysis by Big Lake Data LLC. Sources: City of Milwaukee Master Property Database; U.S. Census LODES Dataset.


Milwaukee Harbor District's
Projected Economic Impact
Property Value Increases
Increase by Land Use
($ in millions)
Office/Commercial
$8M
Mixed-Use
$841M
Industrial
$15M
Total Change $864M
Increase by Plan Area
($ in millions)
$239M Harbor View
$236M Kinnickinnic River Corridor
$193M East Greenfield Avenue
$155M First Street Corridor
$41M Grand Trunk
Total Change $864M
Analysis by Big Lake Data LLC. Sources: City of Milwaukee Master Property Database; U.S. Census LODES Dataset.

Small Business Support and Development

Entrepreneurship, business starts and business scale-ups are major employment drivers and indicators of the economic health and vitality of a city. The Harbor District has long been, and is still, home to the kind of low-cost, flexible space that is prized by new and small businesses. Older warehouse buildings like the Lincoln Warehouse at S. 1st and Becher serve as informal incubators that have helped many small businesses get their start. These buildings also play an important role in stabilizing an area where property values are low and generating economic activity. As property values rise, they may be redeveloped for higher value uses, and the small business tenants move on to a new area. The Tannery complex at S. 6th St. and Virginia, or the "Artery" - former artist studios in Walker's Point now being redeveloped for housing - provide examples of this cycle.

4. Provide outreach to connect small businesses to existing resources and support. Ensure that outreach is responsive to the diversity of business types - from artisan manufacturers to professional offices - and the diversity of business owners.

5. Characterize space needs of second-stage businesses. Encourage development in the Harbor District, especially the First Street Corridor and Kinnickinnic River Sub-District, to meet the needs of these businesses.

Industry Attraction

The Market Analysis revealed 17 industry sectors that rely on large quantities of water in their production processes or for shipment or for both and, critically, are aligned to the industry clusters that drive Milwaukee's economy. There is a potential for these sectors to be attracted to the Harbor District and to capitalize on the city's workforce and supply chaining and local knowledge of end markets:

- Poultry processing
- Distilleries
- Breakfast cereal manufacturing
- Leather tanning
- Petrochemical manufacturing
- Cookie, cracker and pasta manufacturing
- Bread making and bakeries
- Organic chemical manufacturing
- Beet sugar manufacturing
- Paint and coating manufacturing
- Semiconductor manufacturing
- Carbon and graphite products
- Inorganic chemical manufacturing
- Milk and butter production
- Carbon black manufacturing
- Snack food manufacturing
- Soft drink manufacturing

Nine of these sectors are related to food and beverage manufacturing, an industry sector strongly represented in the District and identified as a primary target sector in several recent plans. Grain products are handled regularly at the Port of Milwaukee. Other sectors are related to chemical manufacturing, a driver cluster in the region and one whose raw materials were identified as ideal candidates for ship-borne transportation, with strong supply chains located around the Great Lakes. It may be possible to attract these industries to the Harbor District.

It should be noted that underutilized industrial sites are in strong supply across many Great Lakes waterfronts. The business sectors identified here do not necessarily need to be located on the water – they operate more efficiently with abundant supplies of fresh water (from water utilities) and with access to vessel shipping. That is to say, the Harbor District is competing with not only other waterfront cities to lure these industries, but with non-waterfront sites as well, in the city and in the region. Land demand is examined in the following section, but for the Harbor District to attract these uses or other redevelopment of brownfield sites, significant investment is site preparation will be required. This will include addressing cleanup and liability, trucking access and other issues to create "shovel-ready" development opportunities.

6. Focus attraction efforts on light industrial and commercial office users identified through the market analysis, or that contribute to Milwaukee's Asset Industry Clusters, as identified in the City's Growing Prosperity Economic Development Plan, and/or benefit from locating close to existing Harbor District anchors (Rockwell Automation, UWM School of Freshwater Sciences, the Water Council, etc.).

Industry Retention and Expansion

The Harbor District is already home to a wide range of employers, as described in Chapter 1. By far the most cost-effective means of ensuring jobs in the area is to retain the jobs that already exist here.

7. Provide outreach to existing businesses to connect them to support and resources, including workforce training, and to identify needs or concerns related to their continued operation in the Harbor District.

Storage tank on Jones Island. Photo by Eddee Daniel.

The Waterfront

Interview subjects, public meeting participants, and stakeholders of all types recognized the unique opportunity afforded by so much waterfront. Unlike Milwaukee's recreational lakefront, and populated corridors along the Milwaukee River, this waterfront has been focused on freight and industrial uses for many decades.

The Market Analysis did not find any growth industries appropriate to this area for which location on a waterfront was an essential factor. Many of the industries listed in the section above have the potential to move goods by water, but would simply need reasonable proximity to the Port for that; others required water as a process input and would be drawing on municipal water or We Energies steam. This does not preclude the possibility of finding a user for whom water frontage would be an important convenience or amenity – for instance, a manufacturer of wind turbines or other large equipment could realize significant savings by being able to ship directly from their site. For other users, a waterfront location might be an important element of their brand or image - a kayak manufacturer or a landscape firm specializing in aquatic restoration. However, such users represents a relatively small potential market and it would not be advisable to restrict the marketing of the District to just those users.

Port Milwaukee is an essential regional transportation asset, and can obviously only be located on the waterfront. See chapter 5, Jones Island sub-district, for specific recommendations related to Port Milwaukee.

8. Concentrate storage and freight transfer operations on Jones Island.

9. Free up the Port's more accessible sites outside Jones Island for job-intensive uses, which could still involve a shipping component.

10. Industrial uses that do not require a waterfront location should not be located on the waterfront.

Salt pile on Jones Island. Photo by Eddee Daniel.

Recreation and Tourism

The waterfront also offers an opportunity for economic development related to tourism and recreational use. As a whole, recreational marinas and boat services are not a strong growth industry; however, spending by recreational boaters while on trips is an economic driver for many communities, and anecdotal evidence suggests that Milwaukee misses out on significant potential as boaters make their way from Chicago to points north.

Cruise ships are not currently a significant portion of Milwaukee's shipping traffic, with annual visits of 2-3 vessels from Europe. However, spending by cruise ship passengers can also be a significant contributor to a local economy.

Paddling – in kayaks and canoes, and on stand-up paddle boards – is a still small but rapidly growing market. Nationally, participation in kayaking has grown from 1.8% in 2007 to 3.2% in 2016 – but in the upper midwest, participation has only reached 2%. Locally, kayak rentals and tours have seen exponential growth.

11. Conduct further research into the opportunities to attract more recreational boating into the Inner Harbor.

12. Explore partnerships with other districts and organizations to create mobile or print maps and guides.

13. Consider recreational destinations – eating and drinking establishments, rental locations, shops - among the mix of uses for waterfront locations.

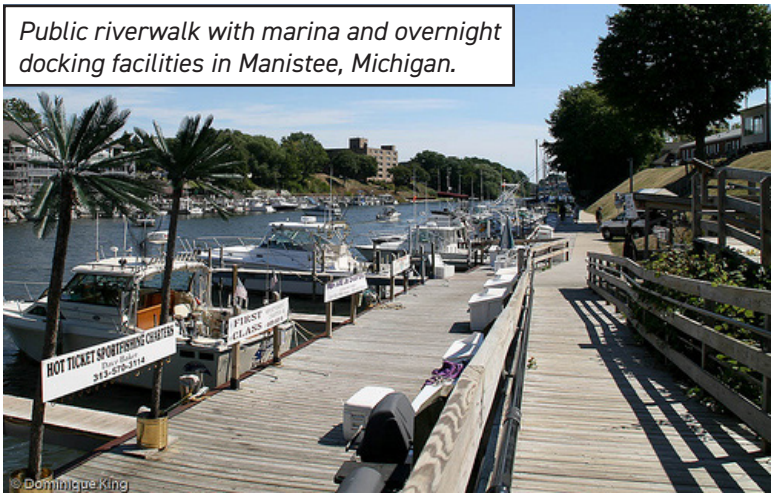
14. Provide more access points for recreational boats of all sizes. Consider ease of use for a variety of types of boats and experience levels of users. On land, ensure adequate parking, signage and other necessary amenities for users.

15. To promote patronage of waterfront businesses by water users, ensure adequate public docking facilities and communicate availability through mobile and print maps. Consider land-based storage systems for kayakers or a kayak-share system.

16. Explore opportunities for water taxi stops and routes which could address the poor connectivity of many Harbor District areas and provide an interesting attraction and amenity for residents, employees and visitors.

17. Ensure that planning considers the safe use of waterways by a range of users as described in The Water sub-district in chapter 5: Sub-District and Corridor Recommendations.

Public riverwalk with marina and overnight docking facilities in Manistee, Michigan.



Environmental Cleanup

Much of the land of today's Harbor District was "created" by filling its marshes with a variety of materials, from relatively clean soil to household and construction waste to foundry sand. Once filled, the land was used by a wide variety of heavy industries: tanneries, coke manufacturing, an iron mill, metal fabrication, and chemical companies.

Today, both the land and waterways of the Harbor District carry the legacies of that history. Land, river sediment, and groundwater have a wide range of contaminants. Additionally, organic materials from the original marsh contribute to very soft soils that slowly release methane gasses. The negative impacts of the contamination have led to the Milwaukee Estuary's designation as an Area of Concern, with eleven identified Beneficial Use Impairments. The Harbor District has one Superfund Alternative site within the Milwaukee Estuary, and many other sites that will require environmental clean-up for future use.

Additionally, the waterways are affected by the more modern problems of urban and agricultural runoff. By the time they reach the Inner Harbor, the three rivers have acquired excesses of salt, suspended solids, phosphorus, trash, animal waste, and other contaminants.

Contaminated soils and methane complicate future re-development. Uncertainty related to the cost and duration of site clean-up can prevent interested users from investing in the area. Poor water quality and contaminated sediments in the waterways limit recreational use of the rivers and adversely affect fish populations.

Recommendations:

1. Complete projects that will support the delisting of the Milwaukee Estuary Area of Concern, particularly cleanup of contaminated sediments within the Inner Harbor.

    a. Create a collaboration among responsible parties, the City and Port Milwaukee, non-profit stakeholders, and state and federal regulators and agencies to coordinate a comprehensive cleanup of sediments, leveraging Legacy Act funds if possible to remove "orphan" sediments.

2. Complete environmental characterization of publicly-owned sites to reduce uncertainty. As Milwaukee learned with the redevelopment of the Menomonee Valley Industrial Center, shovel-ready sites can readily compete with greenfield sites for high-quality users.

3. Identify financial resources to assist private property owners with clean-up of their sites.

4. Provide guidance for property owners to demystify environmental liabilities and clean-up requirements.

5. Encourage collaborative efforts and information sharing that can result in more cost-effective cleanups and better environmental outcomes.

6. Advocate for high standards in clean-up projects to improve the environmental quality of the area.

7. Advocate for the enforcement of existing environmental regulations and improved regulations to protect the area's future environmental quality.

Stormwater Management and Water Quality

This section describes the broad policies and strategies to direct future stormwater management practices in the Harbor District. The section begins with an overall vision for the purpose and function of stormwater management in the Harbor District before moving to district-wide recommendations. Additional recommendations and priority projects for stormwater management can also be found in chapter 5: Sub-District and Corridor Recommendations.

Vision

The Harbor District will strategically capture or clean the first 15,000,000 gallons of stormwater - the first ½ inch of rainfall across the entirety of the District - to protect the Combined Sewer System and to improve water quality in adjacent water bodies. Innovative and integrated stormwater management practices will improve water quality, provide green space, improve urban habitat, and reconnect the community to the historical and cultural significance of water in the area.

Background

Stormwater runoff is one of the biggest sources of pollution in urban areas. Streets, parking lots, rooftops, and lawns are covered in dirt, dust, bacteria, fertilizers, trash, and other pollutants. In the Harbor District, stormwater carries these pollutants either to the Combined Sewer System (CSS) or into the Kinnickinnic River and Inner Harbor. Practices on the land have direct impacts on water quality in our surrounding rivers, the Harbor, and on Lake Michigan. Capturing and treating stormwater runoff on the land - either through green infrastructure or other practices - helps reduce pressure on the CSS and helps improve water quality in adjacent waterways.

Different approaches will be necessary to achieve water quality and quantity goals across the District, depending on whether sites are riparian or are served by the CSS. Additionally, some areas in the Harbor District currently lack stormwater or sewer infrastructure. Significant infrastructure planning will be needed in these areas, providing an opportunity to install innovative, effective infrastructure from the onset.

Recommendations

1. Ensure that the treatment of stormwater runoff from riparian and separate storm sewer properties exceeds regulatory standards.
    a. Prepare for impending changes in regulations, including the Total Maximum Daily Load (TMDL) implementation process.
    b. Achieve a 50% reduction in total suspended solids District-wide.
    c. For new construction sites, target an 80% reduction in total suspended solids.

2. Capture and/or clean the first half-inch of stormwater on site to reduce impact on waterways and to reduce pressure on the CSS.

3. Complete next level stormwater management planning for the Harbor District's planning districts and corridors. Planning should include a regional stormwater management network, specific to the unique needs and constraints of each of the districts and corridors, to assist property owners in achieving water quality goals.

    a. Utilize the Kinnickinnic River Green Infrastructure Plan to identify water quality "hot spots" and target green infrastructure and stormwater management projects in those areas to provide the most water quality benefits for the investment.

4. Create a stormwater substitute City ordinance to Chapter 120 for properties within the Harbor District. Adapt language from the City's Chapter 120-14, "Control of Storm Water Discharge for the Milwaukee River Greenway Site Plan Review Overlay Zone" to trigger stormwater management regulations at 5,000 square feet or more of impervious area.

5. Implement green and grey infrastructure best management practices to provide buffers or treatment systems for areas of impervious cover larger than 5,000 contiguous square feet.

6. Prioritize the use of green infrastructure.

    a. Encourage site-to-site connectivity of stormwater ribbons, bioswales, and other landscape features.

    b. Design stormwater management practices to produce multiple benefits including: greening, habitat, improved aesthetics, and educational, historical, or cultural value in addition to stormwater and water quality improvements.

    c. Avoid wet stormwater ponds whenever possible.

    d. Develop incentive programs for new and existing developments to install and maintain green infrastructure projects.

    e. Include components of the City's Green Streets program, as appropriate, with all new street build-outs or roadway reconstruction projects.

7. Inform the prioritization of projects in the Kinnickinnic River Nine Key Element Plan and work towards implementing priority projects in the Harbor District.

8. Whenever possible, incorporate stormwater best management practices as part of other construction projects to provide cost efficiencies and water quality improvements.

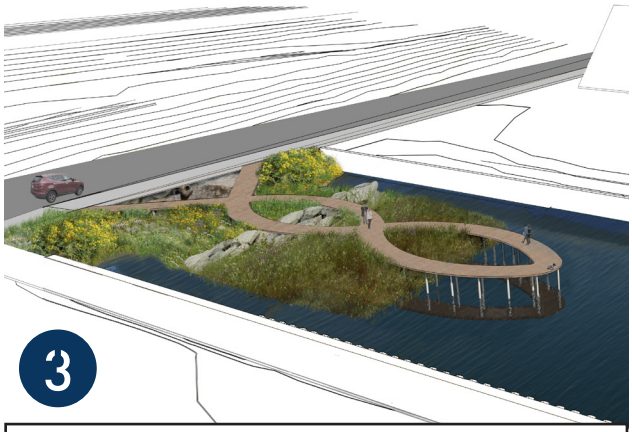
9. Achieve a better balance between impervious cover and green space at new construction and redevelopment sites.

1

Stormwater park in Los Angeles, CA. Shared stormwater green infrastructure could be integrated with new development in the East Greenfield Avenue sub-district.

Sidewalk bioswale in Washington, D.C. Example of green infrastructure that could be deployed in more urbanized areas of the Harbor District.

2



3

Rendering by James Wasley of a possible habitat feature and green infrastructure at the west end of the UWM School of Freshwater Sciences slip.

Rendering from the Bay View Wetland Master Plan showing potential habitat, public access, and green infrastructure at the Grand Trunk Wetland.

4


GREEN INFRASTRUCTURE OPPORTUNITIES
Combined Sewer
Potential Sites for Green Infrastructure
Buildings & Structures
Harbor District Boundary
MILWAUKEE RIVER
WATER STREET
INTERSTATE 794
NATIONAL AVENUE
FIRST STREET
GREENFIELD AVENUE
LAKE MICHIGAN
KINNICKINNIC RIVER
INTERSTATE 94
MITCHELL STREET
INTERSTATE 43
BECHER STREET
BAY STREET
LINCOLN AVENUE
KINNICKINNIC AVENUE
1
2
3
4

Sustainable Resource Consumption

The current planning and revitalization effort in the Harbor District was sparked by a recommendation in the City of Milwaukee's Refresh Milwaukee plan: to make this area a catalyst for sustainability in Milwaukee. Many topics related to sustainability are covered in greater depth in other sections of this plan, including stormwater and water quality, pedestrian and bicycle access, economic development, and social equity. Beyond those topics, several attributes of the area present unique opportunities to make it a showcase for sustainability and are outlined here.

Sustainable Water Use

Milwaukee is fortunate to have a concentration of water research and technology companies, a water industry nonprofit, the Water Council, and the UW-Milwaukee School of Freshwater Sciences all working to advance Milwaukee's standing in the global water industry. One of the success stories of their work has been the development of the Alliance for Water Stewardship (AWS), "a global network that promotes responsible use of freshwater that is socially and economically beneficial and environmentally sustainable."

With the AWS located a few blocks away in the Global Water Center, the Harbor District is the perfect place to pilot the AWS' water stewardship system on a district scale. As a relatively new program, the AWS has mostly worked with large global corporations to better manage their water usage and stewardship. However, the same AWS principles and certification system that apply to individual corporations can also be applied to geographic areas, individual users, or watersheds. AWS and Harbor District businesses and institutions can work together to apply the AWS approach to the Harbor District and serve as the model for district-scale responsible water use and stewardship.

1. Work with a select group of businesses, institutions, and property owners to implement the Alliance for Water Stewardship (AWS) International Water Stewardship Standard. The long-term goal is for all businesses and institutions in the Harbor District to adhere to the AWS standard.

photo by Jim Wasley

The Greenfield Avenue Gateway at the corner of 1st and Greenfield captures 40,000 gallons of rainwater and circulates it through native wetland planters.

District Steam Energy

We Energies has been providing steam energy for Milwaukee's greater downtown area since 1897. In recent decades that steam has been produced at the Menomonee Valley Power Plant and distributed to more than 400 customers that include a number of large downtown properties, Marquette University, Aurora Sinai Hospital, Rockwell Automation, and the UWM School of Freshwater Sciences.

Steam district energy provides numerous benefits to users including the elimination of boiler systems and other mechanicals at end user facilities, improved energy efficiency, and the elimination of on-site combustion and associated emissions and emissions systems. Participation in a steam district energy system can also qualify for points towards green building certification programs such as LEED. We Energies steam is food-grade and can be used in a variety of industrial processes.

Pipes carrying steam from the Menomonee Valley Power Plant to customers in the downtown area.

Much of the western and northern portions of the Harbor District are served by this district energy system, but with few actual users. There is an opportunity for many more properties and businesses to take advantage of the benefits of a district energy system, especially where existing steam service lines exist along South First Street and East Greenfield Avenue.

2. As properties are developed or redeveloped, connections to We Energies' district steam energy system should be encouraged where feasible.

Lake Water Cooling

The Harbor District's location at the shores of Lake Michigan provides a unique opportunity for renewable energy in the form of cold lake water. Lake or sea water cooling systems draw cold water from the depths of large water bodies, such as Lake Michigan, and use it to cool buildings in a manner that is much more efficient than traditional building cooling systems. Research has shown that deep water cooling systems use 1/10 the average energy needed for traditional building cooling systems.

Local examples of lake water cooling systems exist with relatively recent systems installed on Milwaukee's lakefront at Discovery World and the Milwaukee Community Sailing Center. The University of Wisconsin-Milwaukee main campus on Milwaukee's upper east side has had a deep water cooling system serving the entire campus for decades. While initial construction costs for deep water cooling systems may be expensive, the return in the form of improved energy efficiency over time can be significant.

3. Explore opportunities to install lake water cooling systems, especially at the district scale.

Habitat and Ecology

Vision

Enhanced aquatic, riparian, and terrestrial ecosystems in the Harbor District achieve a balance between natural and human-altered systems.

While the Harbor District will never return to the rich fish- and wildlife- supporting estuary that it once was, there is certainly room for the industrial urban environment to exist in harmony with improved natural systems. Steel sheet piling shorelines can offer pockets of native vegetation to improve both habitat and aesthetics. Swales and vegetated buffers can improve water quality, clean and capture runoff, while providing habitat for pollinators, birds, and other species.

Background

Prior to its use as an industrial port, the Harbor District area was home to an impressive array of ecosystem types. Due to its location in the "tension zone" - a transitional area between the southern and northern plant communities - Milwaukee was home to a diverse compilation of prairies, forests, and wetlands. Fish communities including lake sturgeon, northern pike, lake trout, yellow perch, walleye, and catfish were among the abundant fish that once called this area home, thriving in the networks of rivers and wetlands. The area was home to countless bird species, and also to many fur-bearing animals that supported the early fur trading economy in the area.

Despite its urban character and altered habitat, a surprisingly resilient urban ecosystem is present in the Harbor District today, though, largely due to years of neglect. The remaining habitat in the area is dominated largely by invasive species, both plants and animals. The Grand Trunk wetland is dominated by invasive plants, and invasive quagga mussels thrive in the harbor. A handful of shore bird species can be seen from the water, migratory birds frequent the Combined Disposal Facility's naturalized areas, and 58 different species of fish have been documented in the various Harbor District waterways. However, many of the bird and fish species present today are just passing through, and fewer of these species are true residents of the area. Much of the habitat that remains today is too degraded, too small, and too disconnected to support healthy ecosystems. In many cases the soils and sediment are also contaminated as well, providing an unhealthy environment for those species that are still present.

Ducks along the Kinnickinic River. photo by Ethan Taxman

Land Recommendations

1. Promote the rehabilitation and restoration of habitat resulting in over 6 acres of restored wetlands, over one mile of shoreline improvements, and an improved network of aquatic and terrestrial habitat.

2. Restore the Grand Trunk Wetland providing improved habitat for Northern Pike spawning. Restore adjacent ephemeral ponds, forest, and grassland habitats to support amphibians, reptiles, birds, and small mammals, and to provide a buffer between development and the wetland.

3. Promote the use of native landscapes, and other green infrastructure-focused landscapes rather than the use of grass lawns.

4. Promote native landscaping, bioswales and vegetated buffers, and an improved urban tree canopy across the District to create a more cohesive green network. Work with property owners and developers to include these components, even at small scales, on their properties.

5. Increase the urban tree canopy to the City of Milwaukee average of 23%.

6. Promote complete streets and street trees or stormwater trees with the creation of a new street grid and with other street improvements.

7. Create corridors of native vegetation where possible along trails and other public access points to improve terrestrial habitat and habitat connectivity.

8. Provide incentives for native landscaping, green buffers and other green infrastructure practices that support stormwater retention and habitat benefits. Include these considerations in a possible Harbor District Stormwater Credit System, or similar incentive program.

Habitat Hotels

Steel sheet piling is the dominant shoreline type throughout the Harbor District, and also in many other urban waterways. While steel sheet piling supports shipping and flood control, it is the least conducive shoreline type for aquatic habitat. The Habitat Hotels project seeks to provide improved habitat features along stretches of steel sheet piling to help connect otherwise disparate patches of habitat throughout the harbor area.

Habitat Hotels are submerged habitat structures installed into the recessed portion of steel sheet piling. Habitat features - including fish shelves, underwater planter boxes, and native aquatic plants - are layered vertically along a central pole to mimic the habitat typically found along a natural shoreline. They are low-cost and low-maintenance, but perhaps most importantly, the Habitat Hotel structures are built in partnership with the welding program at Bradley Technical High School, installed in partnership with the UWM School of Freshwater Sciences, and planted with local K-12 students helping to connect area youth to the waters - and the fish - of the Harbor District.

Water Recommendations

9. Work with partners to implement science-based pilot projects to improve aquatic habitat connectivity, assess and share results, and incorporate new best practices into future developments.

10. Develop and implement innovative solutions to improve shoreline and aquatic habitat. In some locations, this may include "naturalizing" the hardened shorelines; in other locations this may include the installation of Habitat Hotels or other engineered habitat features.

11. Implement all projects identified as necessary for delisting habitat-related beneficial use impairments in the Milwaukee Estuary Area of Concern.

Education Recommendations

12. Utilize the changing urban environment as an educational tool to engage area youth and families.

13. Develop signage and programming to educate visitors on the ecological aspects of the Harbor District and ongoing efforts to protect and preserve habitat and ecosystems. Special focus should be given to educating City of Milwaukee youth who often have few opportunities to interact with natural systems.

Milwaukee Estuary Area of Concern (AOC)

Areas of Concern (AOC) are some of the most polluted and altered areas along our Great Lakes. Past human activities – industry, logging, mining, etc. – have left behind contamination or otherwise altered the ecosystems so much so that special attention and resources are needed to restore the areas. There are 31 Areas of Concern in the United States, and five in Wisconsin.

The Harbor District is at the center of the Milwaukee Estuary AOC. Priorities here include remediating contaminated sediments in the waterways, controlling non-point source pollution, improving water quality for recreational purposes, and enhancing fish and wildlife populations.

More information on the Milwaukee Estuary AOC can be found online at http://dnr.wi.gov/topic/greatlakes/milwaukee.html.

Public Art

Throughout the planning process, community members and stakeholder recommended public art as a tool for advancing or achieving plan goals. People saw public art playing a variety of roles as the Harbor District changes in the coming years. Key opportunities for art include:

1. Educate the public on issues and opportunities in the Harbor District. Public art can help people understand the complex context and dynamics of this changing part of our city, its importance, and the future vision.

2. Activate spaces temporarily that may take time to develop or change. Many spaces in the Harbor District will take time to clean and develop. While those processes are playing out, there is an opportunity for public art to temporarily activate or beautify those spaces to signal to the wider community that change is happening and there is great potential in this place.

3. Build awareness of revitalization efforts. Public art can grab people's attention in a way that few other media can. Location-specific work can highlight challenges and opportunities of a specific site.

4. Honor people, places, or events of cultural or historic importance. Public art can illustrate and educate the community on the variety of people, cultures, businesses, institutions, and traditions that have made the Harbor District what it is today.

Artistic wayfinding signage at a museum in Sheffield, England.

Temporary public art installation on vacant lot in Phoenix, AZ.

"Culture Work" mural on Mitchell Street honoring Wisconsin's Latino immigrant workers and the 50-year history of UMOS.

5. Assist visitors with wayfinding using artistic signage. As highlighted in other sections of this plan, much of the Harbor District is currently difficult to access and separated from the rest of the city by railroads, dead-end streets, and waterways. Creative signage is more likely to draw the attention of people and may make wayfinding signage more effective. Artistic signage would also contribute to the identity and character of the Harbor District as people would associate the artistic signage with this area.

6. Illustrate or illuminate production or processes for industrial or utility properties in the Harbor District. Industrial and utility properties often screen their facilities to mask the activities within. However, views into a building can provide an engaging form of urban theater, and creative screening and fencing can also be used to intrigue and inform. As manufacturers struggle to recruit new workers, this could prove a cost-effective means of marketing.

7. Maintain physical and visual connections to the water. With the main amenity and defining attribute of the Harbor District being the water, public art can play a role in celebrating that identity and preserving access to the water. Public art can serve as wayfinding to the water's edge, illuminate features of the water that may not be always visible or below the surface, and accentuate important locations along the water's edge.

8. Beautify the built environment. In its most basic sense, people generally think of public art as a method for beautifying spaces and places. This can mean placing public art in a location in the form of a mural, sculpture, or some other physical installation. However, it can also mean taking an artistic approach to the design of buildings, public spaces, and infrastructure. All aspects of the future development of the Harbor District should strive to incorporate art in an effort to create an attractive, unique, and engaging urban environment.

An art exhibition in Berlin, Germany educates visitors on the effects of climate change on German forests.

Sculpture in Toronto, Canada.

Artistic seawall in Vancouver, Canada.

Artistic water fountain in Toronto, Canada that filters water and is part of a neighborhood-wide stormwater treatment facility.